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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
CHOW, CHARLES CHIANG

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 06/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/342,843	J. Knuutila
Examiner	**Art Unit**
Charles Chow	2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jun 29, 1999*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-42* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *Jun 29, 1999* is/are a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *5, 6*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Detailed Action

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert et al. (US 5,519,886) in view of Funk (US 6,169,884 B1).

Regarding **claim 1**, Gilbert discloses a method and apparatus for controlling a transmitter of a portable radio communication apparatus (title, abstract, Fig. 2, transmitter 242, temperature sensor 246) for communication in a radio communication network (TDMA network, col. 1, line 36) employing transmission by a plurality of carrier frequencies (establishing wireless radio frequency carrier, col. 2, line 15; manipulation of the operation of the data communication protocol 120 using temperature information, col. 2, lines 24-30; col. 3, line 42-54).

Gilbert discloses the frames (data packets) each consisting of a predetermined number of time slots (col. 3, line 37) and the transmitter transmitting data burst during one or more of said time slots in the frame (col. 3, lines 16-41, packet data protocol; different channels; preferred time slots; protocol parameters).

Gilbert does not clearly indicate the details clearly enough for the controlling of the transmitter output, although Gilbert discloses the controlling the operation transmission protocol, the transmission rate, the transmission delay, the reducing period to avoid the continuous transmission, the segmenting data messages into smaller packets.

Funk teaches the method and apparatus for system (col. 6, line 20) for monitoring at least one criterion associated with heat generated by the transmitter (monitoring the temperature, and output power of the power amplifier 111, abstract, front figure; CDPD packet data, col. 2, line 32).

Funk teaches the providing a signal responsive to the at least one monitored criterion (temperature, transmission power level) for reducing the transmitter output power (abstract). Besides, Funk also teaches the inserting of the brief transmission pause cycle in the data transmission stream to reduce the transmitter's overheating (abstract, col. 5, lines 33-35). Funk also teaches the reducing the transmission duty cycle (col. 5, lines 13), and the control signal to back-off transmitter's output power to lower level (col. 3, lines 48-67). It is apparently obvious to include the reducing transmission power level to avoid the transmitter's overheating. By doing so, the transmitter could be protected from damage by controlling of the transmitter's output power or inserting the pause period to reduce the transmission period. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Funk's temperature/power level monitoring, the reducing transmitter's output power level, and the inserting back-off brief pauses period, to Gilbert, such that the transmitter could be protected from damage.

Regarding **claim 2**, referring to the examiner's comment in claim 1 above, Gilbert (Fig. 2, temperature sensor 246, also thermistor 115 from Funk, provides the monitoring of the temperature of the transmitter.

Regarding **claim 3**, Gilbert discloses the monitoring of the number of transmitted data burst in a frame (via comparing with the stored packet size for the data communication protocol, to segmenting the data packet message into smaller packets so as to reduce periods of continuous transmission, col. 4, lines 43-48; col. 5, line 59-61).

Regarding **claim 4**, it has shown above in claim 1, Funk teaches the monitoring of the transmitter temperature and reducing the transmitter output power level.

Regarding **claim 5**, it has been shown above in claim 1, Funk has taught the back-off the transmitter output power level from high power level to the lower power level (col. 3, lines 48-67). Also, in below Mazur teaches the power control using the predetermined first/second power level.

2. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert in view of Funk, and further in view of GSM 04.08 version 4.19.1 (ETS 300,557).

In the above, Funk has taught the reducing of the transmitter output power. However, Funk does not indicate clearly enough for changing the maximum power classmark.

Regarding **claim 6**, GSM 04.08 (page 51, section 3.4.9.2, the abnormal cases; sections 3.4.10-3.4.12) teaches the procedure for the changing of the power classmark from mobile request. It's obvious apparent to include the flexibility of changing the power classmark for

the transmitter in the abnormal situation. By doing so, the transmitter could reduce the heat to be building up by reducing the power class mark. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add GSM 04.08's mobile request for changing the power classmark and the changing procedure, to Gilbert as modified above, such that the mobile station could change the power classmark due to abnormal, temperature, situation.

Regarding **claim 7**, referring to claim 3 above for the monitoring of the smaller packet segmenting for decreasing the transmitter's temperature.

Regarding **claim 8**, Gilbert has shown in claim 1 above, the comparing, exceeding the packet size in the protocol, and the modifying, segmenting, the packet data into smaller packet size.

Regarding **claim 9**, Gilbert has shown above the communication device 200 performs the monitoring step.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert in view of Funk, and further in view of Mazur et al. (US 6,072,792).

In the above, it does not include the network performs the monitoring.

Regarding **claim 10**, Mazur teaches network (base station 32) performs the monitoring of the transmitter's power output level for controlling, scheduling, the base station's power level in a time slot-by time slot basis (title, abstract, col. 1, lines 11-17, col. 6, line 33-38, col. 11, line 30-58, col. 4, lines 37-40; the symbol offset less than a selected number symbols, col. 12,

lines 1-7). The downlink power control on a time slot-by time slot basis (col. 3, line 42-26) could apparently improve the downlink burst performance for the communication link (col. 3, lines 37-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Mazur's monitoring of the slot power level by base station 32, to Gilbert as modified above, such that the base station could communicate well with the mobile station by controlling the downlink burst slot power level.

4. Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert in view of Funk, and further in view of Fujiwara et al. (US 6,091,741).

In the above, it does not clearly enough for the details of the comparing of the predetermined limit of the burst.

Regarding **claim 11**, Fujiwara teaches the comparing the monitored number with a predetermined limit (alpha 1/2, front figure, abstract) and changing the operation of the transmitter if the monitored number falls outside the predetermined limit (abstract, claim 3, 5), in order to avoiding the collision (title) by changing the contention mode for slave station to the polling mode. By doing so, the master station could schedule the transmission request by changing the slave station's contention mode to the scheduled polling mode to avoid the transmission collision. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Fujiwara's monitoring/calculating of the amount of the data transmission; the alpha 1/2 limits for switching the transmission modes, to Gilbert as modified above, such that system could avoid the data collision.

In the above, it has shown the disclosure for a method for controlling a transmitter; plurality of frequencies; time slots; monitoring of the burst in the frame; exceeding the protocol packet size therefore, modifying communication protocol, segmenting message into the smaller packet size from Gilbert.

Regarding **claim 12**, Gilbert discloses the monitoring is performed over time periods for previous transmission (col. 3, lines 9-11), the pre-determined number packet size from the data communication protocol.

Regarding **claim 13**, referring to the examiner's comments above in claim 3 for the controlling of the transmitter's output power.

Regarding **claim 14**, referring to claim 6 above for the changing power classmark.

Regarding **claim 15**, Gilbert discloses the monitoring of the transmitter's temperature and response to the monitored temperature data to control the number of the data packet size.

Regarding **claim 16**, referring to the examiner's comment in claims 3, 8 above for the decreasing the number of burst packet to smaller packet size, and the exceeding of the predetermined packet size in the communication protocol.

Regarding **claim 17, 18**, referring to the examiner's comment in claim 9, the monitoring is performed by the communication device 200; and the monitoring is performed by the network's base station 32.

5. Claims 19-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert in view of Funk, and further in view of GSM 04.08 (ETS 300,557).

Regarding **claim 19**, referring to examiner's comments in claims 1, 4, 6 for a method for controlling a transmitter; plurality of frequencies, time slots, monitoring power level; the comparing the monitored power; the changing maximum transmission power classmark in response to the monitored transmission power level.

Regarding **claim 20**, referring to claim 6 for the method of decreasing by changing the power classmark, and referring to claim 1 for the monitoring the power level from Funk, and Mazur showed above the comparing with the predetermined first, second power level for controlling the transmit power.

Regarding **claim 21**, referring to the examiner's comment above in claim 1 for the system and the apparatus in a radio network having frequencies, time slots, burst, for monitoring at least one criteria associated with the heat, and at least one output criterion of the transmitter (output power, packet size, delay, transmit period) being responsive to the monitored criterion.

Regarding **claim 22**, referring to the examiner's comments in claim 2 above for the system and the temperature of the transmitter.

Regarding **claim 23**, referring to the examiner's comments in claim 3 above for the system and the number of bursts in a frame.

Regarding **claim 24**, referring to the examiner's comments in claim 4 above for the system for the transmitter power output.

Regarding **claim 25**, referring to the examiner's comments in claim 5 above for the system and the exceeding a predetermined limit then decreasing the transmitter power level. Also,

in claim 6 it showed the exceeding the power classmark and GSM 04.08 has the procedure to change the transmit power output level.

Regarding **claim 26**, referring to the examiner's comments in claim 6 above for the system and the decreasing, changing, of the power classmark.

Regarding **claim 27**, referring to the examiner's comments in claim 1 above for the system and output criterion comprising the number of burst in a frame (modify the burst packet size for a smaller size).

Regarding **claim 28**, referring to the examiner's comments in claim 8 above for the system and the exceeding a predetermined limit data amount (Fujiwara); the exceeding of the predetermined packet size limit of the communication protocol and segmenting the packet size into smaller size (Gilbert).

Regarding **claim 29**, referring to the examiner's comments in claims 1, 9 above for the system and the communication device 20 including the monitoring means.

Regarding **claim 30**, referring to the examiner's comments in claim 10 above for the system and the network (base station 32) including the monitoring means.

6. Claims 31-42 rejected under 35 U.S.C. 103(a) as being unpatentable over Gilbert in view of Funk, and further in view of Fujiwara.

Regarding **claim 31**, referring to the examiner's comments in claims 1, 3, 11 above for the system; the network; the frequencies; the slots; the burst; the monitoring; the changing of the

operation of the transmitter's communication protocol; the comparing of the predetermined limit.

Regarding **claim 32**, referring to the examiner's comments in claims 12 above for the system and the predetermined period of time or predetermined number of frames.

Regarding **claim 33, 34, 35**, referring to the examiner's comments in claims 1, 14 above for the system and the processor (controller 210, Gilbert) controlling of the power output; the changing of the power classmark via mobile request of the GSM procedure; the controlling of the burst by changing segmenting into smaller packet size.

Regarding **claim 36**, referring to the examiner's comments in claim 1 above for the system and the monitoring number of burst to decreasing the bursts by segmenting the packet size into smaller size.

Regarding **claim 37, 38**, referring to the examiner's comments in claims 1, 9, 10 above for the system and the apparatus/network for monitoring, comparator for comparing, the processor.

Regarding **claim 39, 40**, referring to the examiner's comments in claims 1-14 above for the system and the means for monitoring; the comparing with the predetermined; the processing to change the maximum power level; the decreasing, changing of the power classmark.

Regarding **claim 41**, referring to the examiner's comments in claim 1 above for the apparatus and the network, the predetermined number of time slots in the communication protocol, the monitoring heat, temperature, the responsive to the monitored criterion.

Regarding **claim 42**, referring to the examiner's comments in claims 1, 14 above for the method and the network, the frequencies, the bursts in the time slots, the apparatus registering, changing, the power classmark with the GSM procedure for the mobile request for changing the power classmark of the communication 200.

Conclusion

7. In the above discussion, Gilbertxxx discloses the method and apparatus for controlling a transmitter of a portable radio communication apparatus TDMA network employing wireless radio frequency carrier, and manipulation of the operation of the data communication protocol 120 using temperature information. The frame, data packets, consists of a predetermined number of time slots and the transmitter transmitting data burst in the time slots of the frame. Gilbert discloses the controlling the operation transmission protocol, the transmission rate, the transmission delay, the reducing period to avoid the continuous transmission, the segmenting data messages into smaller packets. Funk teaches the method and apparatus for system for monitoring at least one criterion associated with heat generated by the transmitter. Funk teaches the temperature, the monitoring of the transmission power level for reducing the transmitter output power. Funk also teaches the inserting of the brief transmission pause cycle in the data transmission stream to reduce the transmitter's overheating. Funk teaches the reducing the transmission duty cycle, and the control signal to back-off transmitter's output power to lower level. GSM 04.08 teaches the changing procedure for mobile request for changing the power classmark. Mazur teaches the monitoring of the slot power level by base station 32. Fujiwara teaches the monitoring/calculating of the amount of the data transmission; the alpha 1/2 limits for switching the transmission modes.

8. The cited pertinent prior arts are listed below:

   A. GB 2,339,113 A, December 2000, Jarno Knuutila (applicant), discloses the same subject matter as shown in abstract, claims.

   B. US 5,914,959, June 1999, Marchetto et al. teaches the automatically selectable

transmission rate due to transmission error (abstract, claim 1).

C. EP 0,800,282 A2, October 1997, Ohno teaches the monitoring of the transmitter's temperature and changing the coding rate, burst time (abstract).

D. US 5,333,175, July 1994, Ariyavisitakul et al. teaches the dynamic power control in a TDMA system by measuring the RSSI, the quality, the word error indicator in uplink burst for controlling the portable transmission power level (abstract).

E. US 5,732,334, March 1998, Miyake teaches the radio transmitter output power monitoring and correcting of the gain of the amplifier 2 according to the temperature table (title, abstract, front figure, col. 13, line 13 to col. 4, line 6).

F. US 5,287,555, February 1994, Wilson et al. teaches the sampled transmitter's temperature data in the time slots and adjusting of the transmitter's gain due to the monitored temperature criteria.

G. WO 96/33,555, October 1996, Kornfeld teaches the temperature compensated automatic gain control as shown in abstract, front figure.

H. US 4,939,786, July 1990, McCallum et al. teaches the adaptive thermal protection for a power amplifier by the remote sense (abstract, front figure).

I. US 6,006,093, December 1999, Aalto et al. teaches the maximum available power output (MS_MAX, Fig. 2, col. 6, lines 34-58) of the transmitter's power classmark (front figure, high, medium, low power class for the mobile station; comparing with the microcell or macrocell power threshold in col. 6, lines 34-58) for matching the power class type of the mobile station for handover to the target cell.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow

May 29,2002.

DANIEL HUNTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600